EXHIBIT 13
Filed Under Seal

DECLARATION OF DR. DAN SCHONFELD

I.   INTRODUCTION

1.   My name is Dan Schonfeld. I have been retained to testify as an expert in this action on behalf of Plaintiffs Google, LLC ("Google"). For this Declaration, I have been asked to analyze U.S. Patent No. 10,848,885 ("the '885 patent"). I am being compensated for my work on this case at my standard consulting rate of $600 per hour. My compensation is not contingent upon the results of my analysis or the substance of my testimony. I reserve the right to supplement my opinions set forth in this Declaration in view of later-produced documents, testimony, or expert reports from Defendant Sonos, Inc. ("Sonos").

II.   QUALIFICATIONS

2.   My qualifications for forming the opinions set forth in this Declaration are summarized here and include my educational background, career history, publications, and other relevant qualifications.

3.   I received my B.S. degree in Electrical Engineering and Computer Science from the University of California, Berkeley, California, in 1986 with a concentration on Computer Engineering / Systems Engineering. I received my M.S. degree in Electrical and Computer Engineering from The Johns Hopkins University, Baltimore, Maryland, in 1988 with a concentration on Speech Processing / Biomedical Signal Processing. I received my Ph.D. degree in Electrical and Computer Engineering from The Johns Hopkins University, Baltimore, Maryland, in 1990 with a concentration on Nonlinear Signal Processing / Image Analysis.

4.   In August 1990, I joined the Department of Electrical Engineering and Computer Science at the University of Illinois, Chicago, Illinois, where I am a tenured Professor in the Departments of Electrical and Computer Engineering, Computer Science, and Bioengineering. Before I joined the University of Illinois at Chicago, I served as an instructor in

the Department of Electrical and Computer Engineering at The Johns Hopkins University, Baltimore, Maryland.

5.   At the University of Illinois at Chicago, I have served as the Director of the University-Industry Engineering Research Center (UIERC), formerly the Manufacturing Research Center (MRC). I am also Co-Director of the Multimedia Communications Laboratory (MCL) and a member of the Signal and Image Research Laboratory (SIRL).

6.   Over the past few decades, I have also served as a visiting professor in (a) the Advanced Analytics Institute (AAI) at the University of Technology, Sydney, Australia, (b) the Department of Information Engineering and Computer Science ("DISI") at the University of Trento, Italy, (c) the School of Computer Engineering at the Nanyang Technological University, Singapore, and (d) the Department of Electrical Engineering—Systems at Tel-Aviv University, Israel.

7.   I have been elected Fellow of the Institute of Electrical and Electronics Engineers ("IEEE") "for contributions to image and video analysis" as well as Fellow of the International Society for Optics and Photonics ("SPIE") "for specific achievements in morphological image processing and video analysis." I have also been elected University Scholar of the University of Illinois.

8.   I have previously served as Editor-in-Chief and Deputy Editor-in-Chief of the IEEE Transactions on Circuits and Systems for Video Technology. I have also previously served as Area Editor for special issues of the IEEE Signal Processing Magazine. I have served as Associate Editor of the IEEE Transactions on Image Processing (on image and video storage, retrieval and analysis), Associate Editor of the IEEE Transactions on Circuits and Systems for Video Technology (on video analysis), Associate Editor of the IEEE Transactions on Signal Processing (on multidimensional signal processing and multimedia signal processing), and Associate Editor

of the IEEE Transactions on Image Processing (on nonlinear filtering). I have also served on the editorial board of the IEEE Signal Processing Magazine, EURASIP Journal of Image and Video Processing, Research Letters in Signal Processing, and Bentham Science Publishers, Ltd.'s "Recent Patents on Computer Science" and "Recent Patents on Electrical Engineering" publications. I have served as guest editor of numerous special issues in various journal publications in the area of multimedia systems.

9.   I have previously served on the Conference Board of the IEEE Signal Processing Society. I have previously served as Technical Program Chair of the IEEE International Conference on Acoustics, Speech, and Signal Processing ("ICASSP") 2018 as well as Program Chair of the IEEE Conference on Visual Communications and Image Processing ("VCIP") 2015. I have also previously served as General Co-Chair of the Workshop on Big Data in 3D Computer Vision 2013 and the IEEE International Conference on Multimedia and Expo ("ICME") 2012. I have served as Chair of the IEEE Workshop on Video Mining 2008 and the SPIE Conference on Visual Communications and Image Processing 2007. I have also served on the organizing committees of various conferences including the IEEE International Conference on Image Processing 1998, 2012, and 2020, IEEE/SPIE International Conference on Visual Communications and Image Processing (VCIP) 2010, 2017, and IEEE Workshop on Nonlinear Signal and Image Processing (NSIP) 1997. I was an organizer of the Thematic Symposium on Multimedia Search and Retrieval at the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2009.

10.   I have authored and co-authored over 250 technical papers for various journals and conferences. I was author of a book chapter, entitled: "Image and video communication networks," and later editions entitled: "Video communication networks." I was co-author (with Carlo Giulietti and Rashid Ansari) of a paper that won the Best Paper Award at the ACM

Multimedia Workshop on Advanced Video Streaming Techniques for Peer-to-Peer Networks and Social Networking 2010. I was also co-author (with Junlan Yang) of a paper that won the Best Student Paper Award at the IEEE International Conference on Image Processing 2007. I was also co-author (with Wei Qu) of a paper that won the Best Student Paper Award at the IEEE International Conference on Image Processing 2006. I was also co-author (with Nidhal Bouaynaya) of a paper that won the Best Student Paper Award in Visual Communications and Image Processing 2006. In addition, many of my publications relate to the broad topic of multimedia systems, which includes audio, image, and video processing. My publications in the area of multimedia systems dates back to 1988.

11. I was the keynote speaker at the International Conference on Wireless Communications and Signal Processing (WCSP), Yangzhou, China, in 2016, and the International Conference on Intelligent Control and Information Processing (ICICIP) and International Conference on Brain Inspired Cognitive Systems (BICS), Beijing, China, in 2013. Further, I was a plenary speaker at the IEEE/IET International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, China, in 2010, and at the IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS), Genoa, Italy, in 2009. I was also a plenary speaker at the INPT/ASME International Conference on Communications, Signals, and Systems (ICCSS), Rabat Morocco, in 1995 and 2001.

12. I have served as Representative of Regions 1-6 (North America) on the Chapters Committee of the IEEE Signal Processing Society. I have also served as Chairman of the IEEE Signal Processing Chicago Chapter. I have also served on the IEEE Image, Video, and Multidimensional Signal Processing (IVMSP) Technical Committee, formerly the IEEE Image and Multidimensional Signal Processing (IMDSP) Technical Committee, Visual Signal Processing and Communications (VSPC) Technical Committee, IEEE Signal and Image Processing in

Medicine Technical Committee, and the IEEE Multimedia Communications Technical Committee. I currently serve on the American National Standards Institute (ANSI) / Underwriters Laboratory (UL) Standards Technical Panel ("STP") on Multimedia Systems.

13. I have also taught various courses that relate to multimedia systems. For example, since the late 1990s, I have introduced and taught an advanced undergraduate-level / first-year graduate-level course on multimedia systems (originally called multimedia communication networks), which focuses on audio, image, and video processing and communications.

14. I have also served as a consultant in various engagements related to multimedia systems. For example, over the past decade, I have served as an expert witness in several cases related to multimedia systems. In 1997, I served as a consultant for Prairiecomm Corp. where, among other tasks, I developed and deployed multimedia systems. Since 2002, I have also served as a member of the American National Standards Institute (ANSI) / Underwriters Laboratory (UL) Standards Technical Panel (STP) on various standards related to multimedia systems.

III.   LEGAL STANDARDS

15. I have reviewed the legal standards set forth in the contemporaneously filed Bhattacharjee declaration and I incorporate them herein by reference.

IV.   THE '885 PATENT

A.   Background

16. The '885 patent is titled "Zone Scene Management." The patent was filed on April 12, 2019, and issued on November 24, 2020. The patent identifies Robert A. Lambourne as the inventor.

B.   Specification

17. The specification of the '885 patent describes conventional multi-zone audio systems available at the time of the invention. '885 patent at 1:46-61. The specification also

5

discusses issues and benefits of those conventional systems. *Id.* at 1:62-2:17.

C.   Prosecution History

18.   I understand that the application underlying the '885 patent was filed on April 12,

2019. On July 5, 2019, the Examiner issued a non-final rejection holding that the claims were

obvious over Yamaha DME Designer. Ex. 17 (2019-07-05 Non-Final Rejection) at 1, 3. On July

5, 2019, the Examiner noted in an Examiner-Initiated Interview Summary that DME did "appear

to disclose the predetermined media with a similar degree of specificity" as the claims. Ex. 19

(2019-07-05 Examiner-Initiated Interview Summary) at 1.

19.   In the August 19, 2020 notice of allowability, the Examiner made the following

statement:

> the prior art does not reasonably teach the subject matter of the independent claims.
> Particularly while DME operates to accomplish playback of selected media in
> synchrony on a selected set of first, second, etc. playback devices when a scene is
> invoked upon said set of players, DME does not allow for continuous output of
> media on a particular playback device and joining of the continuous output by a
> selected playback device or set thereof in synchrony with media currently playing
> back upon the particular playback device. That is, the prior art enables the selection
> of a device or group for synchronized playback of media, however the
> synchronization is the start of the process. Whereas invocation of a scene which
> adds a playback device or group thereof as claimed causes the added playback
> device(s) to join with a particular playback device currently playing media and
> output said media in synchrony with the particular playback device without a pause
> or interruption of the playing media nor any need for a user to further engage with
> playback controls of the playing media. The Bose teaches a system which allows
> for synchronous addition of media players to a playback system while delivering a
> playing media without interruption. Bose displays static groupings of media players
> attached as "rooms" and the rooms may be individually activated and individually
> configured for delivery of a synchronous media and/or grouped into a party mode
> where all rooms synchronously deliver a common media. As such Bose does not
> allow dynamic additions and subtractions such as the synchronous addition of a
> particular third media player and removal of a second media player in substantially
> real time by the selection of an appropriately configured scene, nor does Bose
> enable scene-wise storage of such diverse groupings of media players. Ex. 20
> (2020-08-19 Notice of Allowability) at 1-2.

20.   I further note that the Examiner "took official notice" that "the grouping and sub-

grouping of a constellation of audio players to include or disclude particular players from an operational set was well known in the art before the effective filing date of the instant invention and would have been an obvious inclusion." Ex. 17 (2019-07-05 Non-Final Rejection) at 3-4. As such, the Examiner found that DME and the knowledge of a person of skill in the art showed that generic speaker groups, which could include or exclude particular speakers were well known in the art prior to the invention. I agree.

21. I also note that DME discloses attributing a name to the various speakers, devices, zones, and groups disclosed therein. *E.g.*, Ex. 21 (DME Designer V4.0 Owner's Manual (2004)). The admitted prior art in the '885 patent is similar, disclosing that groups may be named "morning," "evening," and "weekend." '885 patent at 2:7-17. Indeed, to be able to identify and separate groups, attributing to those groups a name or identifier would have been obvious and was well known in the art.

D.   Effective Priority Date

22.   The filing date of the '885 patent is April 12, 2019, and the patent claims priority to an earlier application with a priority date of September 11, 2007. I also understand that Sonos has alleged that the '885 patent is entitled to an earlier effective filing date, September 12, 2006. Sonos has also claimed a conception date of December 21, 2005.

V.   LEVEL OF ORDINARY SKILL IN THE ART

23. I understand that the hypothetical person of ordinary skill in the art is presumed to have knowledge of all references that are sufficiently related to one another and to the pertinent art, and to have knowledge of all arts reasonably pertinent to the particular problem that the alleged invention addresses.

24. In my opinion, a person of ordinary skill in the art of the '885 patent would have at least (a) a bachelor's degree in computer science, computer engineering, electrical engineering, or

an equivalent thereof, and (b) at least 2-4 years of professional experience in the field of multimedia playback systems, such as consumer audio systems, or an equivalent level of skill, knowledge, and experience. Moreover, additional education could substitute for work experience and significant work experience could substitute for formal education.

25. I meet the criteria and consider myself a person with at least ordinary skill in the art pertaining to the '885 patent. I would have been such a person at the time of alleged invention of the '885 patent.
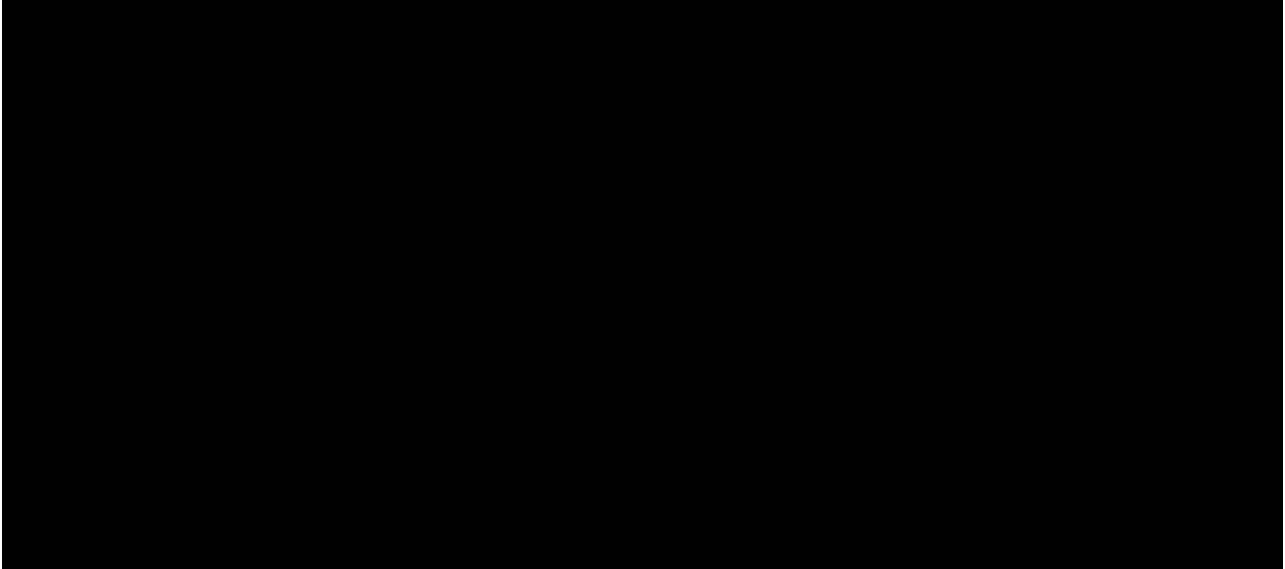
VI.   NON-INFRINGEMENT

26.   Sonos raises three separate arguments for infringement in its contentions. First, Sonos ignores the court's claim construction and argues that "zone scene" is instead met by conventional speaker groups. I am not an attorney, and therefore I analyze this argument assuming that Sonos may be able to ignore the court's existing claim construction order.

27.   Even if that is the case, though, Sonos has pointed to no evidence that there is a "scene" in Google's accused products. 2022-01-20 Sonos Supp. Infr. Contentions Ex. D at 5-7. Sonos first cites to a website for creating and managing groups (https://support.google.com/googlenest/answer/7174267?co=GENIE.Platform%3DAndroid&hl=en%20), but this website never mentions scenes. Rather, it discusses how to "create and manage speaker groups" and discusses Android and iPhone instructions. *Id.*
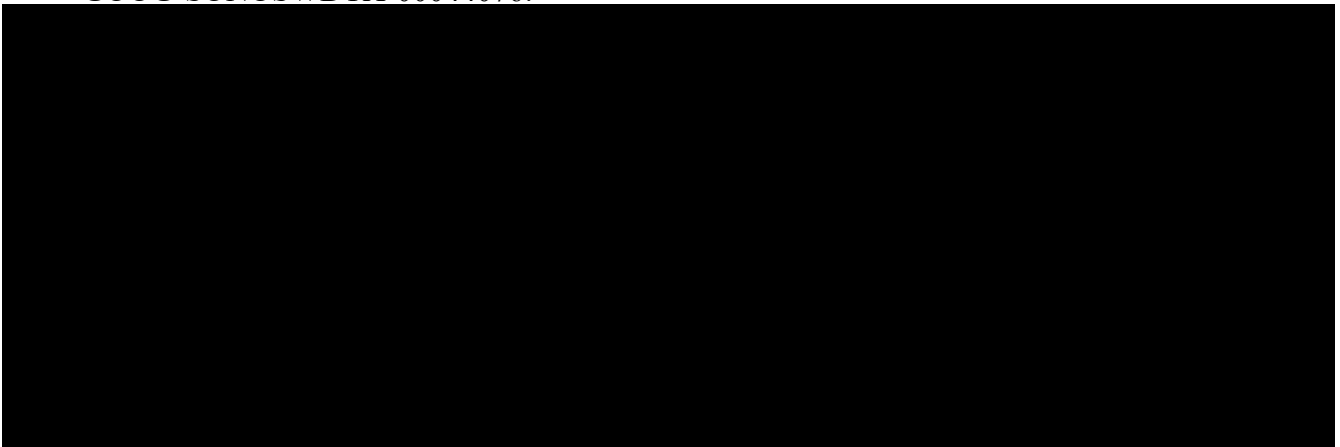
28.   Next, Sonos cites to GOOG-SONOSWDTX-00048962, which is a document titled "Multizone - cast_shell integration." *See* Ex. 22. Sonos quotes the following paragraph as support for its infringement contentions: "Some CastV2 commands have been added to allow the Google Cast app to configure groups. Whenever one of the commands arrives, the group configuration is updated and stored in the prefs file on the device. The change is also sent to the MultizoneManager." *Id.* Once again, neither this document nor this quote relates to

8

"scenes." Instead, the document relates to speakers joining and being removed from groups, as

well as other related issues. *Id*. There is no additional information that Sonos has identified or

that I recognize as constituting a "scene." Sonos also cites to "join_group," which is identified in

this document:

The code snippet discussing join_group does not mention or refer to "scene" information either.

Rather, it shows that the data included is a UUID, a name, and optionally a leader. Sonos has not

mapped any of these data to the claimed "scene" except for "name," which is discussed further

below.

29.   Next, Sonos cites to GOOG-SONOSWDTX-00044046, which is a document

entitled "Cast Setup Protocol V10." *See* Ex. 23. Here, Sonos cites to the following snippet on

GOOG-SONOSWDTX-00044076:

Once again, different variables are identified such as UUID, name, leader, temporary, channel_selection, multichannel_group, and stereo_balance, but Sonos does not identify any of these variables as the claimed "scene" and I do not recognize any as a "scene." There was certainly nothing new or novel in the '885 patent about group identifiers, names of groups, etc. I expect to offer invalidity opinions regarding the '885 patent in a forthcoming expert report, and I reserve all rights to expand on the opinions stated herein.

30.   Second, Sonos argues that the accused speaker systems do meet the requirements of the court's construction and that they include a "common theme." 2022-01-20 Sonos Supp. Infr. Contentions Ex. D at 5-7. Sonos cites to the same webpage discussed above (https://support.google.com/googlenest/answer/7174267?co=GENIE.Platform%3DAndroid&hl=en) to argue that Google provides instructions on how to create "speaker groups" for "synchronous music throughout the home." Sonos, however, has not claimed any synchronous speaker group. Rather, the court construed the claims to include a "common theme," which is not present.

31.   Sonos next argues that "every 'speaker group' that a user creates in a Cast-enabled playback system has some common theme, which in this context amounts to whatever common topic, subject, etc. led the user to decide that these particular Cast-enabled media players should be placed into a previously-saved group that allows for synchronous playback when invoked." 2022-01-20 Sonos Supp. Infr. Contentions Ex. D at 5-7. Sonos effectively argues that a user may have a "common theme" in his or her mind when they create the speaker group. Sonos, however, has offered no evidence that this is the case. Indeed, it would seem impossible to offer evidence of what a user has in their mind when they create a speaker group because that would require reading the user's mind.

32.   Sonos's citations to the '885 patent specification do not support its position. Sonos first cites to 2:38-45: "According to one aspect of the present invention, a mechanism is provided

10

to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner. For example, the players in the scene are all caused to play an audio source or music in a playlist, wherein the audio source may be located anywhere on a network." This portion of the specification discusses that the theme or scene may include having the speakers "all caused to play an audio source or music in a playlist." Sonos, however, has not identified any such functionality in the accused products. For example, Sonos has not identified any functionality where users are grouping players according to a theme or scene. This passage describes that this grouping may involve playing back an audio source or music in a playlist, which is not part of the accused product's grouping functionality. This is therefore inconsistent with Sonos's allegations discussed above regarding join_group because the join_group message does not perform the functionality described in this passage.

33.   Sonos next cites to 3:52-56: "FIG. 3A provides an illustration of one zone scene, where the left column shows the starting zone grouping—all zones are separate, the column on the right shows the effects of grouping the zones to make a group of 3 zones named after 'Morning.'" *See also id.* at 8:57-61. It is unclear why Sonos believes that this passage supports its position. This passage does refer to naming a group of three zones, but it does not state that this in and of itself is a zone scene. Further, the context of the '885 patent describes additional features and functionality that are required for a "zone scene" such as additional attributes including music playlists, equalization, etc. *See supra*; *id.* at 9:20-30.

34.   Next, Sonos cites to 10:37-42: "The process 600 then moves to 604 where it allows a user to decide which zone players to be associated with the scene. For example, there are ten players in a household, and the scene is named after 'Morning'. The user may be given an interface to select four of the ten players to be associated with the scene." This portion of the specification

11

does not support Sonos either, because while there may be "zone players to be associated with the scene," there is no recitation that the "scene" is merely a "group," and indeed the specification treats these two concepts differently in this excerpt by referring here to "scene" rather than group, even though speakers/zones are being selected.

35.   Sonos also cites to the Markman hearing where Google's counsel stated: "the theme would be, for example, grouping three areas as a morning scene or a morning theme because you get up in the morning and these are the three areas you want to have music in. You could do the same thing -- and the patent provides examples -- for other types of zone scenes for different times of day or different types of events." Dkt. 106 [Markman Hr. Tr.] at 30:24-31:5. This statement is not helpful for Sonos either because Google's position, based on its claim construction briefing, has been that a "zone scene" may begin with a set of zone players or speakers, but must also include the claimed "theme" or "scene."

36.   Sonos also cites to a number of non-technical dictionaries for definitions of the word theme.

> American Heritage Dictionary of the English Language, Fifth Edition (2011), available at https://www.thefreedictionary.com/theme (defining "theme" as "[a] topic of discourse or discussion."); Collins English Dictionary – Complete and Unabridged, 12th Edition (2014), available at, https://www.thefreedictionary.com/theme (defining "theme" as "an idea or topic expanded in a discourse, discussion, etc"); https://www.learnersdictionary.com/definition/theme (defining "theme" as "the particular subject or idea on which the style of something (such as a party or room) is based"); https://dictionary.cambridge.org/us/dictionary/english/theme (defining "theme" as "the main subject of a talk, book, movie, etc.").

These dictionary definitions do not support Sonos's position either, because even if these dictionaries did define the word "theme," Sonos has still not identified any such "theme" in the accused products. For example, Sonos has not mapped any of these dictionary definitions to Google's technical documents or to the identified join_group. I agree that there is no such viable

mapping and therefore the accused Google products and services cannot infringe.

37.   Finally, Sonos accuses the "naming" of speaker groups as meeting the claimed "common theme": "a Cast-enabled computing device also prompts the user to input a name for the 'speaker group,' which serves as the user's shorthand label of the common theme . . . ." 2022-01-20 Sonos Supp. Infr. Contentions Ex. D at 5-7.   As shown in Sonos's own citations to the specification above, naming groups is different from a "zone scene."   The specification discusses both of these elements separately and distinctly, and indeed a name is not a "theme" or a "scene," it is merely a name.   For example, a user could choose to name a speaker group that he or she intends to be used for a party something completely unrelated, such as "upstairs," or "zero," or "infinity."   None of these names have anything to do with the user's party, nor do they inherently have any effect that would instigate a grouping of speakers appropriate for a party.

38.   Accordingly, under the plain meaning of "zone scene" and the court's construction of that term, Google cannot infringe.

VII.   RESERVATION OF RIGHTS

39. If Sonos is permitted to set forth additional theories with respect to infringement, I will address those additional theories in a subsequent declaration. I reserve the right to raise further reasons for non-infringement in subsequent declarations, reports and/or at trial.

VIII. CONCLUSION

I, Dan Schonfeld, Ph.D declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Dated: April 14, 2022

_____
Dan Schonfeld, Ph.D

13